



Reference: 001133.207

November 29, 2005

Ms. Kasey Ashley
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403-1072

**Subject: Site Investigation Work Plan, Granite Construction Ukiah Hot Plant,
Ukiah, California; Case No. 1NMC545**

Dear Ms. Ashley:

Here is the site investigation work plan for the Granite Construction Company (Granite) Ukiah Hot Plant (site), Mendocino County, California. This report includes a brief discussion on the background of the site, vicinity information, and a description of the proposed work. This work plan was prepared by SHN Consulting Engineers & Geologists Inc. (SHN) on behalf of Granite, as requested by the California Regional Water Quality Control Board, North Coast Region (RWQCB), in a letter dated August 9, 2005.

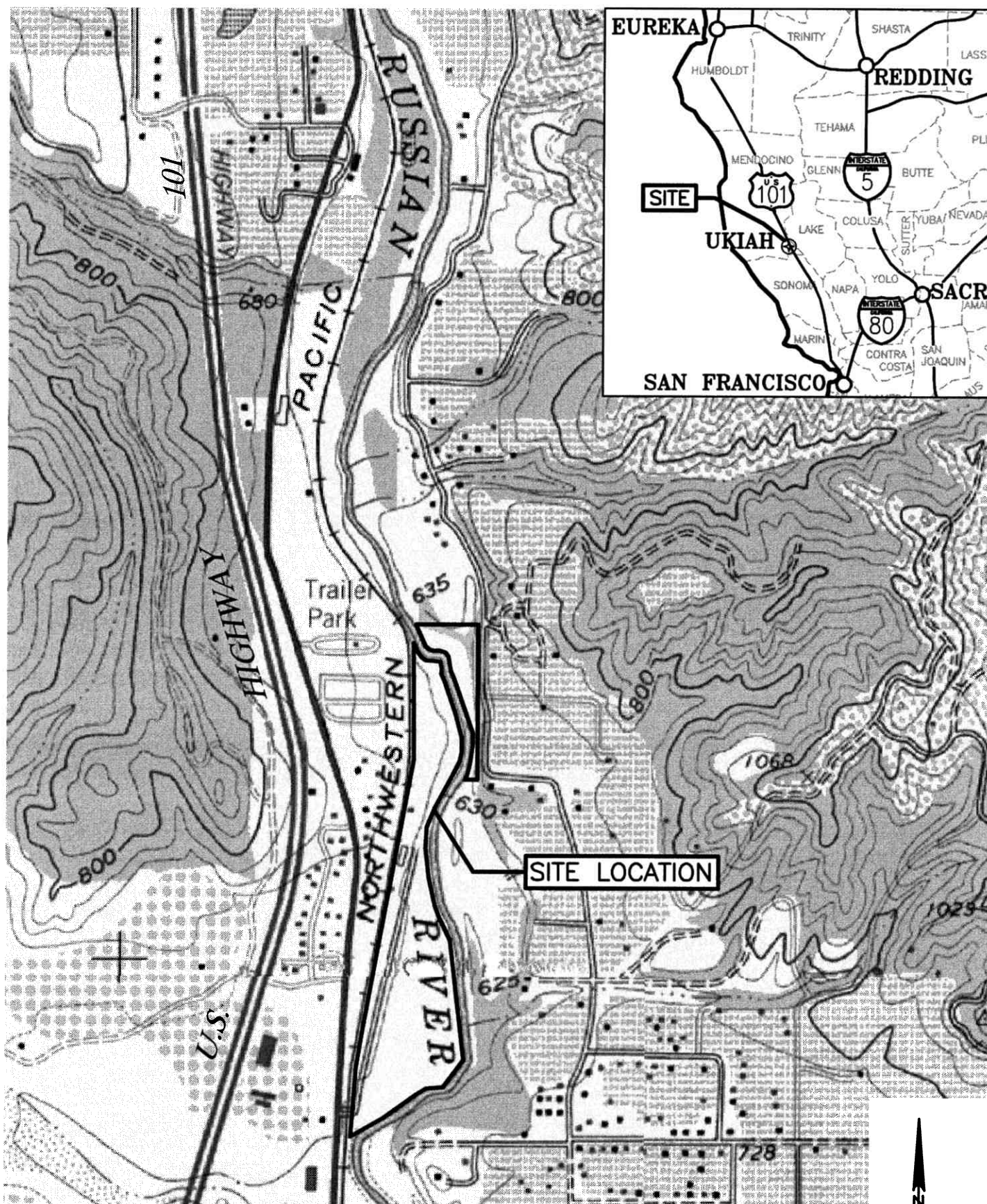
Vicinity Information

The Ukiah Hot Plant is located approximately 2 miles north of Ukiah, between the Russian River and State Highway 101 (Figure 1). The overall subject property encompasses in excess of 40 acres, of which the 4 southern parcels (Assessor Parcel Numbers [APNs] 167-260-05, 167-230-15 & 16, 167-190-24) are occupied by the asphalt batch and gravel processing plants, gravel stockpiles, and other support facilities (referred to in general as the "batch plant site"). The remaining 2 parcels (APNs 168-120-01 & -04) consist of approximately 3.8 acres of gravel bar and stream channel, located on the east side of the Russian River near the north end of the batch plant site.

The site is bound to the north, east, and south by the Russian River, and to the west by commercial/residential development located along North State Street. The elevation of the site is approximately 640 feet above Mean Sea Level (MSL).

Background

Granite is the current owner and operator of the facility, having purchased the facility from Parnum Paving. Prior to Parnum, several different owners/operators have been at the facility over the past 40 years. The facility consists of sand and gravel aggregate operations, an asphalt drum-mix plant (hot plant), an equipment yard, and a maintenance shop. Facility operations include the stockpiling of gravel and rock material, crushing, washing, and sorting of the sand and aggregate used for general roadway construction, and for the incorporation of processed aggregate into asphalt concrete. The operations also include the fueling, maintenance, and storage of equipment used to transport and use the paving materials, as needed.



SOURCE:
UKIAH USGS 7.5 MINUTE QUADRANGLE

1"=1000'±

On July 9 through 11, 2001, SHN supervised the installation of 28 soil borings and 50 test pits. Soil borings and test pit locations were selected by SHN or Granite and then cleared by NORCAL Geophysical to minimize damage to existing underground utilities. Soil borings were drilled using a truck mounted Geoprobe® rig operated by Fisch Environmental of Valley Springs, California. Borings were extended to a maximum depth of 23 feet Below Ground Surface (BGS). One hand-augered boring was advanced to 6 feet BGS behind the shop. Test pits were excavated using a backhoe or excavator and extended to a maximum depth of 11 feet BGS. Complete results of the investigation are presented in the report entitled *Environmental Site Assessment, Ukiah Hot Plant, Ukiah, California*. (SHN, 2003). Soil and groundwater analytical data from the investigation are included in Attachment 1.

On March 8 and 9, 2004, SHN supervised Weeks Drilling of Sebastopol, California in the installation of 3 groundwater-monitoring wells (MW-1 through MW-3) in the vicinity of the asphalt plant (SHN, 2004).

Site plans are included as Figures 2, 3, and 4. Debris, gravel, and material piles have substantially changed since the site plans were created in July 2001, and these features shown on the site plans may not be representative of current conditions.

Geology

Geology in the vicinity of the site consists of Quaternary Alluvium underlain by Plio-Pleistocene age alluvial and lacustrine deposits locally known as the Ukiah Beds. The Ukiah Beds are composed of low permeability materials consisting of moderately indurated beds of clayey and sandy gravels with subordinate amounts of clayey sands and sandy clays (NGI, 1987).

In general, sediments in the vicinity of the asphalt batch plant consist of varying thicknesses of gravelly fill with minor asphalt debris underlain by interbedded sandy gravels and fine to medium grained sands or silty sands. Depth to bedrock varied from approximately 15–17 feet BGS. The bedrock consists of moderately indurated olive green siltstone or claystone.

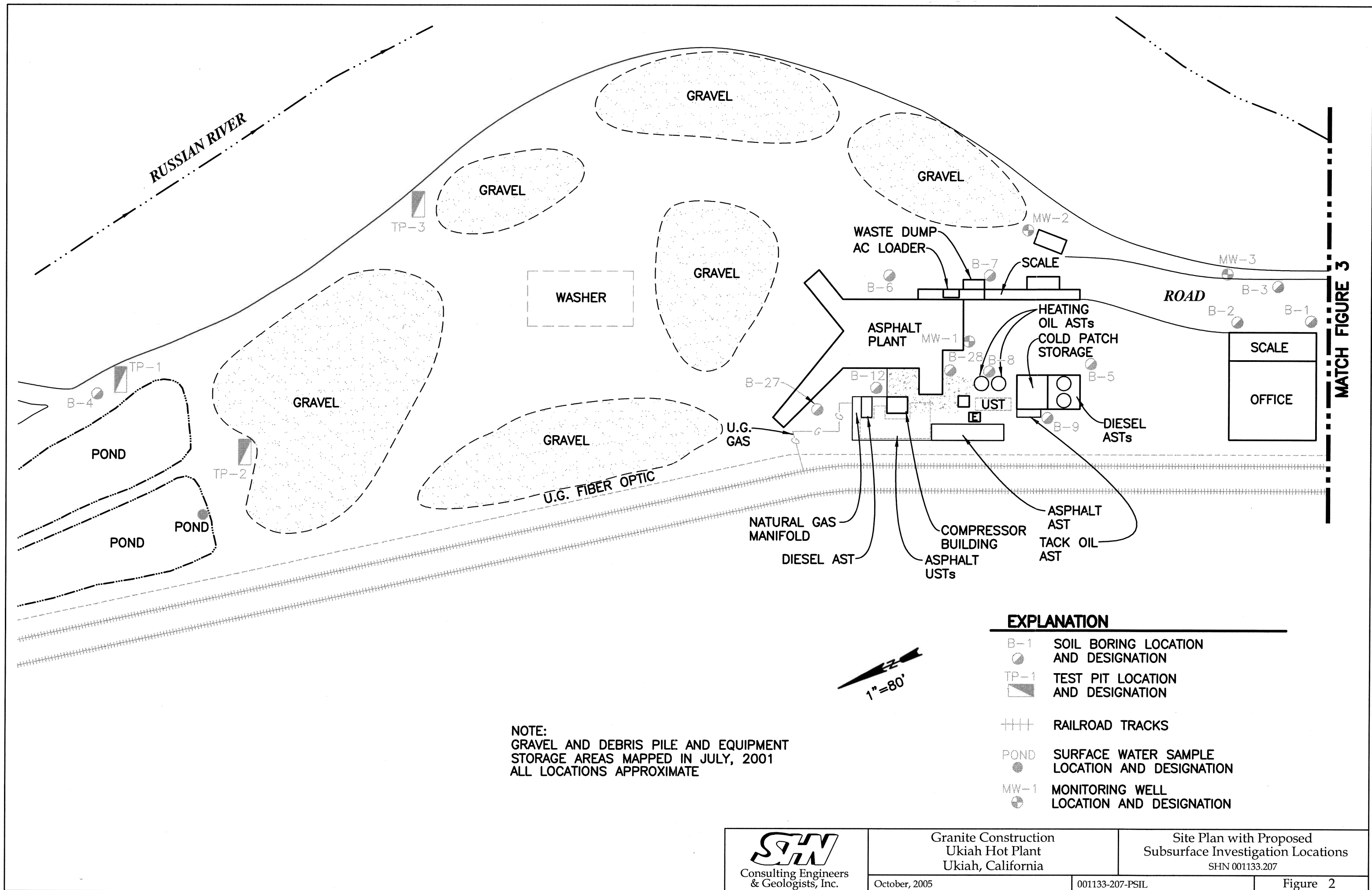
Objective

The objective of the proposed work scope is to define the extent of any soil or groundwater in the vicinity of the fuel dispensers, aboveground storage tanks (ASTs) and wash pad, and at the debris and material storage areas. Shallow contaminated soil near the used oil AST behind the shop will be excavated.

Scope of Work

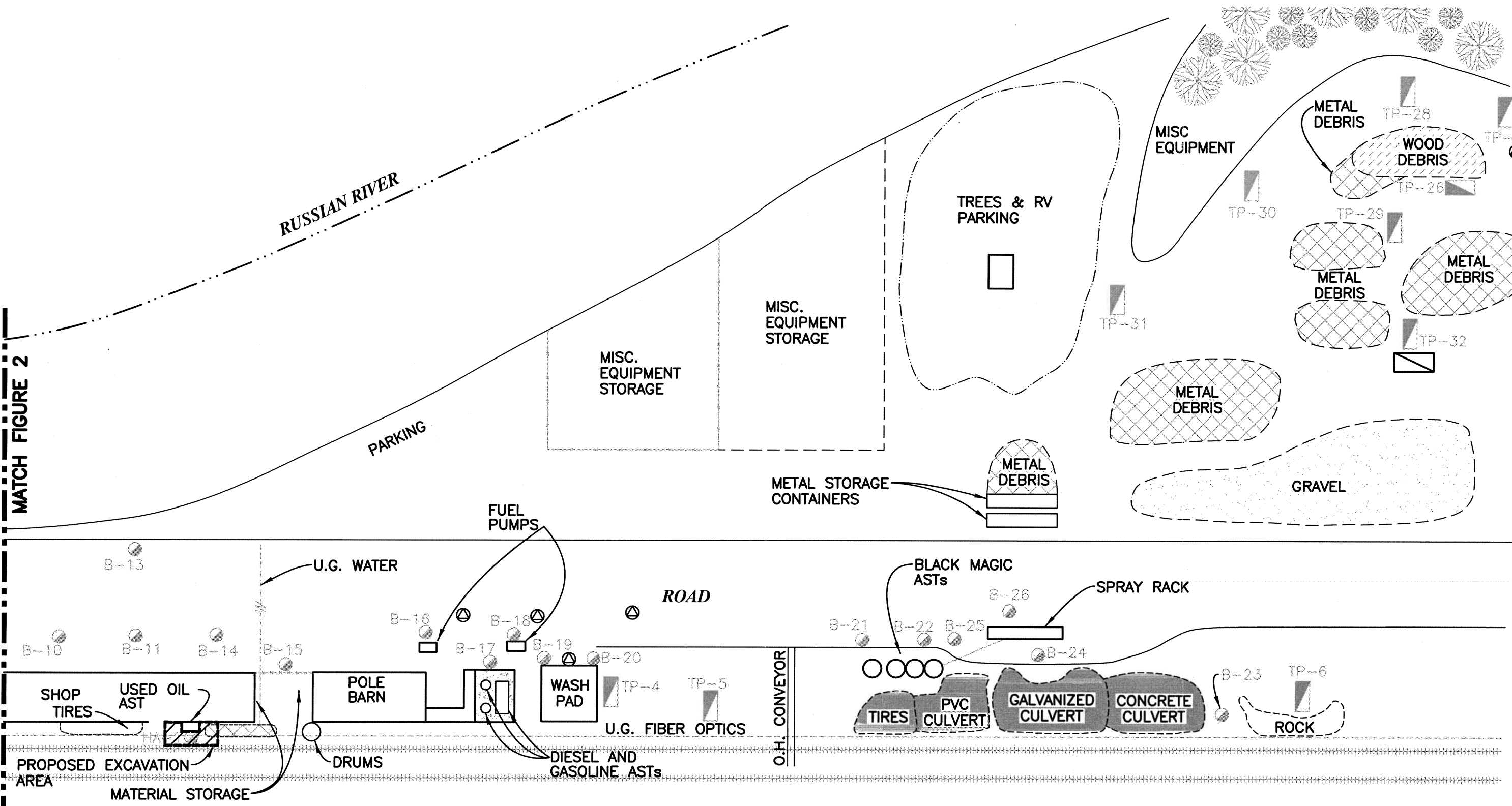
This scope of work is designed to provide the information needed to meet the objective of this investigation. The scope consists of the following:

- Conduct project implementation.
- Excavate two test pits and collect one soil sample from each test pit.
- Drill 8 soil borings.
- Install 8 temporary well points.



MATCH FIGURE 2

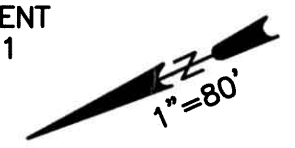
MATCH FIGURE 4



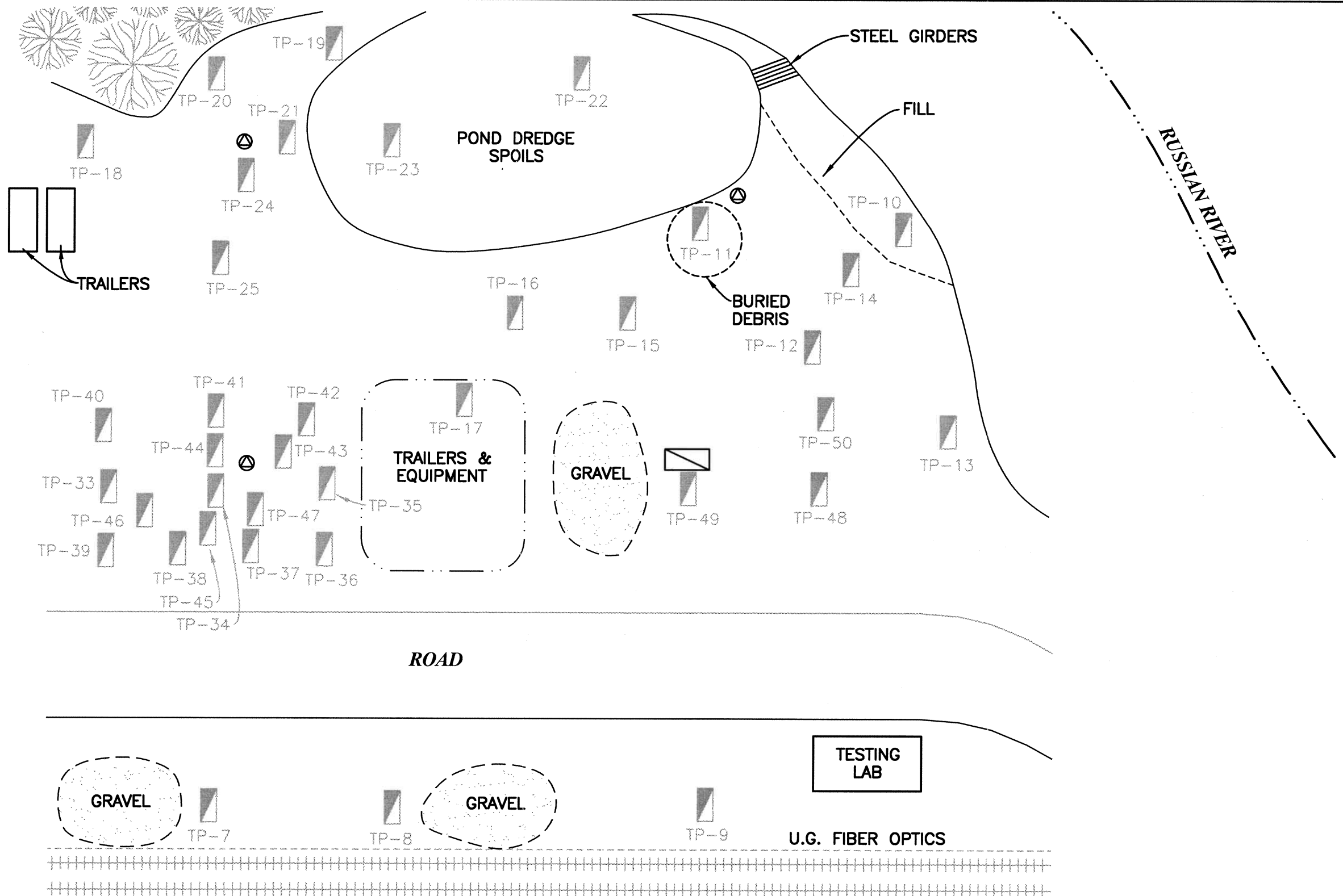
EXPLANATION

- B-1 SOIL BORING LOCATION AND DESIGNATION
- TP-1 TEST PIT LOCATION AND DESIGNATION
- RAILROAD TRACKS
- PROPOSED SOIL BORING/WELL POINT LOCATION
- PROPOSED TEST PIT LOCATION

NOTE:
GRAVEL AND DEBRIS PILE AND EQUIPMENT
STORAGE AREAS MAPPED IN JULY, 2001
ALL LOCATIONS APPROXIMATE



MATCH FIGURE 3



EXPLANATION

- B-1 SOIL BORING LOCATION AND DESIGNATION
- TP-41 TEST PIT LOCATION AND DESIGNATION
- PROPOSED SOIL BORING/WELL POINT LOCATION
- RAILROAD TRACKS
- PROPOSED TEST PIT LOCATION

NOTE:
GRAVEL AND DEBRIS PILE AND EQUIPMENT
STORAGE AREAS MAPPED IN JULY, 2001
ALL LOCATIONS APPROXIMATE



SH
Consulting Engineers
& Geologists, Inc.

Granite Construction
Ukiah Hot Plant
Ukiah, cAlifornia

Site Plan with Proposed
Subsurface Investigation Locations
SHN 001133.207

October, 2005

001133-207-site-sub

Figure 4

- Collect soil and groundwater samples from each boring/well point.
- Excavate impacted soil from near the used oil AST and collect confirmation samples from the excavation sidewalls and floor.
- Prepare a report of findings including the results of the investigation, and recommendations for future action.

Project Implementation

In addition to providing this work plan, SHN will set up and coordinate all activities related to the project, procure any permits, contact Underground Service Alert, and correspond with the RWQCB.

Test Pits

Two test pits are proposed to be excavated. Proposed test pit locations are shown on Figures 3 and 4. Test pit locations were chosen based on soil analytical data from shallow soil samples collected from test pits TP-32 and TP-49. At these locations a thin layer of fill was present which contained detectable concentrations of petroleum hydrocarbons. The test pits will extend to approximately 5-feet below grade, and soil samples will be collected from the test pit sidewall below the fill layer. Soil samples will be collected in laboratory supplied containers, will be placed in an iced cooler, and transported under chain-of-custody documentation to a State of California-certified analytical laboratory for chemical analysis. Soil samples will be analyzed for constituents discussed in the Laboratory Analysis section.

Direct Push Soil Borings

Eight soil borings are proposed to be installed by direct push technology using a truck-mounted Geoprobe®. Proposed soil boring locations are shown on Figures 3 and 4. Four borings will be advanced in the vicinity of the fuel dispensers, AST's, and wash pad. Four borings will be advanced in the material storage areas near the locations of test pits that had detectable concentrations of petroleum hydrocarbons in soil samples. Additional borings and/or well points may be advanced to determine the extent of visibly impacted material.

Continuous core soil samples will be collected for lithologic interpretation and possible chemical analysis using the Geoprobe® Macro-Core sampling system. Following core retrieval, the core will be screened in the field for the presence of petroleum hydrocarbons using an Organic Vapor Analyzer (OVA). A portion of the core sample will be selected, and the ends of the tube will be sealed using Teflon® tape and plastic end caps. Each sample will be labeled with location, depth, date and time of collection, analysis requested, and the sampler's initials. Up to 2 samples will be submitted for laboratory analysis from each boring from above the saturated zone. Soil samples from each boring will be placed in an iced cooler and transported under chain-of-custody documentation to a State of California-certified analytical laboratory for chemical analysis. Soil samples will be analyzed for constituents discussed in the Laboratory Analysis section.

Temporary Well Points

Each soil boring will be converted into a temporary groundwater well point. The well points will be used to assess the presence of petroleum hydrocarbon contamination in groundwater. The proposed well point locations are shown on Figures 3 and 4.

Each well point will be installed using a 1-inch diameter, stainless steel, slotted well point screen advanced approximately 4 feet beneath the water table, or a 3/4-inch diameter PVC casing and screen inserted into an open borehole. The well points will be measured for depth to water and then purged of approximately three casing volumes of water using a small stainless steel bailer, new polyethylene bailer, peristaltic pump, or clean disposable tubing fitted with a check valve. Groundwater samples will be collected in laboratory supplied containers, labeled, placed in an iced cooler and transported under chain-of-custody documentation to a State of California-certified analytical laboratory for chemical analysis. Groundwater samples will be analyzed for constituents discussed in the Laboratory Analysis section.

Following groundwater sample collection, each boring will be promptly backfilled with 3/8-inch bentonite chips, then hydrated, and completed at the surface to match the existing surface.

Soil Excavation

Visibly impacted soil from the vicinity of the used oil AST will be excavated. The approximate excavation area is shown on Figure 3. The excavation may be limited in extent due to the presence of an underground fiber optic line which runs near the railroad tracks along the length of the property and the proximity to buildings and railroad tracks. Based on the soil analytical data from the July 2001 investigation, the excavation should not exceed 6 feet in depth. SHN will collect one sidewall sample for every 20 linear feet of sidewall, and 1 soil sample from every 400 square feet of excavation floor area. Soil samples will be placed in laboratory supplied brass tubes or glass jars. Soil samples from the excavation cavity will be placed in an iced cooler and transported under chain-of-custody documentation to a State of California-certified analytical laboratory for chemical analysis. Soil samples will be analyzed for constituents discussed in the Laboratory Analysis section.

Equipment Decontamination Procedures

All drilling equipment will be cleaned prior to bringing it on site. All drilling equipment that requires on-site cleaning will be cleaned using the triple wash system. The equipment will first be washed in a water solution containing Liquinox® cleaner, followed by 2 rinses with distilled water. Soil and water samples will be collected in pre-cleaned containers supplied by the analytical laboratory and drilling contractor.

Waste Handling

Soil generated during the excavation will be placed on and covered with Visqueen®. Any excess soil generated during soil boring installation will be placed on the excavated soil stockpile. The soil will be treated by processing the soil through the asphalt batch plant. Documentation of soil processing will be provided by Granite.

Water used in the decontamination of equipment, tools, and all purge water will be contained in Department of Transportation (DOT)-approved DOT 17 E/H, 55-gallon drums. The water will be transported to SHN's purge water storage facility and will be discharged, under permit, to the City of Eureka wastewater collection system.

Laboratory Analysis

Each soil sample will be analyzed for:

- Total Petroleum Hydrocarbons as Motor Oil (TPHMO) and as Diesel (TPHD) in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8015
- Total Petroleum Hydrocarbons as Gasoline (TPHG); Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX); and Methyl Tertiary-Butyl Ether (MTBE) in general accordance with EPA Method No. 5030/8021B

Each groundwater sample from the temporary well points will be analyzed for:

- TPHMO and TPHD in general accordance with EPA Method No. 8015
- TPHG, BTEX, and MTBE in general accordance with EPA Method No. 5030/8021B

A State of California-certified analytical laboratory will conduct all analyses.

Report Preparation and Field Program Implementation

SHN will begin implementation of the field program upon receipt of approval from the RWQCB. The report of findings for the investigation will be prepared for submittal to the RWQCB within 60 days of completing the investigation.

If you have any questions or if I can help in any way, please call Roland Rueber or me at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.


John Aveggio, P.E.
Project Manager

JJA/RMR:lms:med:ap

Attachment 1: July 2001 Analytical Data

copy w/attach: Mr. Geoff Boraston, Granite Construction
Mr. Jordan Main, Granite Construction
Mr. Wayne Briley, Mendocino County Department of Environmental Health



Ms. Kasey Ashley

Site Investigation Work Plan, Granite Construction Ukiah Hot Plant

November 29, 2005

Page 6

References Cited

- NGI. (1987). *Geologic Investigation of the Existing York Ranch Wood Waste Disposal Facility Operated by Louisiana Pacific Corporation near Calpella, Mendocino County, California*. Eureka: NGI.
- SHN Consulting Engineers & Geologists, Inc. (2003). *Environmental Site Assessment, Ukiah Hot Plant, Ukiah, California*. Eureka: SHN.
- . (2004). *Monitoring Well Installation and First Quarter 2004 Groundwater Monitoring Report, Ukiah Hot Plant, Ukiah, California; Case No. 1NMC545*. Eureka: SHN.

Table 1-1
Soil Analytical Results, July 9 - 11, 2001
Granite Construction - Ukiah Hot Plant, Ukiah, California
(in ug/g)¹

Sample Location/Depth (feet)	TPHD ²	TPHMO ²	TPHG ³	B ³	T ³	E ³	m.p-X ³	o-X ³	MTBE ³
B-1 @ 3.5'	<1.0	<10	1.0	<0.0050	0.05	<0.0050	<0.0050	<0.0050	<0.050
B-2 @ 7.5'	<1.0	<10	<1.0	<0.0050	0.067	<0.0050	<0.0050	<0.0050	<0.050
B-3 @ 3.5'	<1.0	190	2.6	<0.0050	0.074	<0.0050	0.0079	<0.0050	<0.050
B-5 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.022	<0.0050	<0.0050	<0.0050	<0.050
B-6 @ 7.5'	30	140	<1.0	<0.0050	0.016	<0.0050	<0.0050	<0.0050	<0.050
B-7 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.050
B-8 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.017	<0.0050	<0.0050	<0.0050	<0.050
B-9 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.071	<0.0050	<0.0050	<0.0050	<0.050
B-10 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.027	<0.0050	<0.0050	<0.0050	<0.050
B-11 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.063	<0.0050	<0.0050	<0.0050	<0.050
B-12 @ 7.5'	<1.0	10	<1.0	<0.0050	0.065	<0.0050	<0.0050	<0.0050	<0.050
B-13 @ 3.5'	<1.0	<10	1.4	<0.0050	0.29	<0.0050	<0.0050	<0.0050	<0.050
B-14 @ 7.5'	<1.0	<10	2.4	<0.0050	0.026	<0.0050	0.0083	<0.0050	<0.050
B-15 @ 7.5'	<1.0	<10	1.0	<0.0050	0.067	<0.0050	<0.0050	<0.0050	<0.050
B-16 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.032	<0.0050	<0.0050	<0.0050	<0.050
B-17 @ 7.5'	<1.0	<10	1.3	<0.0050	0.038	<0.0050	<0.0050	<0.0050	<0.050
B-18 @ 7.5'	3,000	1,100	370	<0.050	0.081	<0.050	<0.050	<0.050	<0.50
B-19 @ 6'	<1.0	<10	1.1	<0.0050	0.031	<0.0050	<0.0050	<0.0050	<0.050
B-20 @ 7.5'	<1.0	<10	<1.0	<0.0050	0.048	<0.0050	<0.0050	<0.0050	<0.050
B-21 @ 6'	<1.0	<10	<1.0	<0.0050	0.031	<0.0050	0.0067	<0.0050	<0.050
B-22 @ 7.5'	<1.0	<10	<1.0	<0.0050	0.035	<0.0050	<0.0050	<0.0050	<0.050
B-23 @ 7'	<1.0	<10	<1.0	<0.0050	0.016	<0.0050	<0.0050	<0.0050	<0.050
B-24 @ 7.5'	<1.0	<10	<1.0	<0.0050	0.049	<0.0050	<0.0050	<0.0050	<0.050
B-25 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.076	<0.0050	<0.0050	<0.0050	<0.050
B-26 @ 15.5'	<1.0	<10	<1.0	<0.0050	0.03	<0.0050	<0.0050	<0.0050	<0.050
B-27 @ 3'	3.7	<10	2.4	<0.0050	0.048	<0.0050	0.005	<0.0050	<0.050
B-27 @ 7.5'	<1.0	<10	1.3	<0.0050	0.057	<0.0050	<0.0050	<0.0050	<0.050
B-28 @ 7'	<1.0	<10	<1.0	<0.0050	0.05	<0.0050	0.0061	<0.0050	<0.050
B-28 @ 12'	1,700	5,200	180	<0.050	0.072	<0.050	<0.050	<0.050	<0.50
B-28 @ 16'	13	51	12	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.050
HA-1 @ 3.5'	1,600	23,000	74	0.0064	0.061	<0.25	<0.25	<0.50	<0.050
HA-1 @ 6'	<1.0	<10	1.3	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050
TP-4 @ 2'	19	240	1.2	<0.0050	0.026	<0.0050	0.0056	<0.0050	<0.050
TP-5 @ 2.5'	<1.0	22	1.0	<0.0050	0.04	<0.0050	0.0061	<0.0050	<0.050
TP-6 @ 2'	<1.0	<10	<1.0	<0.0050	0.023	<0.0050	<0.0050	<0.0050	<0.050
TP-7 @ 1.5'	260	210	110	<0.0050	0.028	<0.0050	0.0059	<0.0050	<0.050
TP-8 @ 3.5'	<1.0	<10	<1.0	<0.0050	0.026	<0.0050	<0.0050	<0.0050	<0.050
TP-9 @ 2'	<1.0	<10	<1.0	<0.0050	0.053	<0.0050	<0.0050	<0.0050	<0.050
TP-11 @ 2.5'	7.7	110	2.0	<0.0050	0.13	<0.0050	<0.0050	<0.0050	<0.050
TP-16 @ 3'	4.5	100	<1.0	<0.0050	0.05	<0.0050	<0.0050	<0.0050	<0.050
TP-18 @ 3'	<1.0	<10	<1.0	<0.0050	0.082	<0.0050	<0.0050	<0.0050	<0.050
TP-24 @ 2'	40	450	<1.0	<0.0050	0.036	<0.0050	<0.0050	<0.0050	<0.050
TP-26 @ 4'	110	300	9.5	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.050
TP-29 @ 2'	<1.0	38	<1.0	<0.0050	0.028	<0.0050	<0.0050	<0.0050	<0.050
TP-32 @ 1'	1,800	<1,000	790	<0.050	0.069	0.53	0.74	0.34	<0.50
TP-34 @ 0.5'	7,400	3,600	580	<0.050	0.11	0.16	0.35	0.53	<0.50
TP-49 @ 2.5'	1,700	1,600	2.0	<0.0050	0.026	<0.0050	<0.0050	<0.0050	<0.050
TP-Composite ⁴	<1.0	20	1.0	<0.0050	0.095	<0.0050	<0.0050	<0.0050	<0.050

1. ug/g: micrograms per gram
2. Total Petroleum Hydrocarbons as Diesel (TPHD) and as Motor Oil (TPHMO) analyzed in general accordance with EPA Method 3550.
3. Total Petroleum Hydrocarbons as Gasoline (TPHG), Benzene (B), Toluene (T), Ethylbenzene (E), Xylenes (X), and Methyl Tertiary-Butyl Ether (MTBE) analyzed in general accordance with EPA Method 8021B.
4. TP-Composite is a composite sample of TP-22 and TP-23.

Table 1-2
Groundwater and Surface Water Analytical Results, July 9-11, 2001
Granite Construction - Ukiah Hot Plant, Ukiah, California
(in ug/L)¹

Sample Location	TPHD²	TPHMO²	TPHG³	B³	T³	E³	X³	MTBE³	FO⁴	VOCs⁵
B-3	75	2,800	<50 ⁶	<0.50	<0.50	<0.50	<0.50	<0.50	ND ⁷	ND
B-4	200	3,500	<50	<0.50	<0.50	<0.50	<0.50	<0.50	ND	ND
B-15	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	<0.50	ND	ND
B-19	<50	<170	64	<0.50	<0.50	<0.50	<0.50	<0.50	ND	ND
B-23	<50	180	<100	<0.50	<0.50	<0.50	<0.50	<0.50	ND	ND
B-28	280,000	1,100,000	4,400	<0.50	<0.50	<0.50	<0.50	<0.50	ND	ND
Pond	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	<0.50	ND	ND

1) ug/L: micrograms per Liter

2) Total Petroleum Hydrocarbons as Diesel (TPHD) and as Motor Oil (TPHMO) analyzed in general accordance with EPA Method 3510.

3) Total Petroleum Hydrocarbons as Gasoline (TPHG), Benzene (B), Toluene (T), Ethylbenzene (E), total Xylenes (X), Methyl Tertiary-Butyl Ether (MTBE), analyzed in general accordance with EPA Method 8260B.

4) FO: Fuel oxygenates Diisopropyl Ether (DIPE), Ethyl Tertiary-Butyl Ether (ETBE), Tertiary-Amyl Methyl Ether (TAME), Tertiary-Butyl Alcohol (TBA), analyzed in general accordance with EPA Method 8260B.

5) Volatile Organic Compounds (VOCs) analyzed in general accordance with EPA Method 8260B.

6) <: Denotes a value that is "less than" the method detection limit.

7) ND: Not Detected